

Methods.— The study was carried out on 20 male Sprague-Dawley rats subdivided in 2 groups (G1: Healthy control, G2: model of pulmonary fibrosis induced by Bleomycine), using whole-body plethysmography and video recordings.

Results.— At rest, in G2, a decrease of expiratory time (TE) and total respiratory time (TTOT) was observed when compared to G1. The mean inspiratory flow (VT/TI) didn't increase significantly in G2 when compared to G1 at rest. However during drinking, TE and VT/TI increased significantly in Fibrosis group. Swallowing frequency didn't significantly change but the % of inspiratory swallowing (I-I) increased significantly when compared to G1.

Discussion.— Fibrosis can probably increase swallow dysfunction and aspiration.

<http://dx.doi.org/10.1016/j.rehab.2013.07.869>

CO42-006-e

Effects of neuromuscular electrical stimulation in addition to a rehabilitation program in patients with chronic obstructive pulmonary disease



A.L. Roy^{a,*}, J. Dupuis^b, C. Viacroze^c, D. Debeaumont^d,
J. Quieffin^e, M.H. Marques^e, C. Dubreuil^e, S. Demangeon^f,
E. Verin^f, C. Tardif^g

^a CHU de Rouen, service de physiologie urinaire, digestive, respiratoire et sportive, 1, rue de Germont, 76000 Rouen, France

^b ADIR association, Bois Guillaume, France

^c Service de pneumologie, CHU de Rouen, France

^d Service de physiologie digestive, urinaire, respiratoire et sportive, CHU de Rouen, Rouen France

^e Service de pneumologie, CHG Le Havre, France

^f CRMPR Les Herbières, Bois Guillaume, France

^g EA 3830, Groupe de recherche sur le handicap ventilatoire, université de Rouen, Rouen, France

*Corresponding author.

E-mail address: royannelaure@hotmail.fr

Aim of the study.— COPD is a major public health problem and a chronic systemic disease which decreases quality of life and effort capacity. Nevertheless rehabilitation programs decrease the number of exacerbations and hospitalizations. This explains why Physical Medicine and Rehabilitation plays a crucial role in COPD. Our aim was first to demonstrate that rehabilitation program increased functional parameters and quality of life and second to evaluate the place of neuromuscular electrical stimulation (NMES) of the quadriceps.

Material and methods.— Thirty two ambulatory patients (5F, age 58 ± 9 y) were included. Inclusion criteria were $FEV1 \leq 60\%$ pred, $FEV1/VC \leq 70\%$, $TLC \geq 80\%$ pred, dyspnea, $18 \leq BMI < 35$ kg/m², an optimized medical treatment, with or without O₂ therapy or non invasive ventilation. COPD must be stable for one month.

All the patients performed pulmonary function tests, 6 minutes walking test (6MWT), incremental exercise test (VO₂, maximal work rate WR) and Saint George's quality of life questionnaire before and after eight weeks of rehabilitation program. At the onset of the program they were randomized to have quadriceps NMES at home (5 days a week, 30 min length, intensity adjusted individually in order to obtain maximum muscle contraction without pain) or not.

Results.— In the whole population, the 6MWT distance was increased (449 ± 92 vs 470 ± 101 m, $P = 0.001$), VO₂ max (15.7 ± 3.1 vs 16.5 ± 3.2 ml/kg/min, $P = 0.002$) and maximal WR (66 ± 19 vs 73 ± 22 W, $P = 0.001$) increased. Saint George's questionnaire total score showed a non-significant improvement (42 ± 11 vs $39 \pm 13\%$). With additional quadriceps NMES, there was no difference in the improvement of the 6MWT distance, exercise tolerance or quality of life.

Discussion.— Our study demonstrated that rehabilitation program had a positive impact on functional parameters, with slightly improvement in quality of life of COPD patients. Nevertheless quadriceps NMES did not add a benefit in these ambulatory patients.

<http://dx.doi.org/10.1016/j.rehab.2013.07.870>

CO42-007-e

Influence of music with a fast tempo on the 6-minute walk test in copd patients



G. Caty^{*}, T. Pieters, G. Liistro, G. Reyckler

Cliniques universitaires Saint-Luc, avenue Hippocrate 10, 1200 Bruxelles, Belgique

*Corresponding author.

E-mail address: gilles.caty@uclouvain.be

Keywords: COPD; 6-Minute Walk Test; Music

Introduction and aim.— The 6-Minute Walk Test (6MWT) evaluates the exercise tolerance and the functional capacity in patients with chronic obstructive pulmonary disease (COPD). Encouraging the patients during the test influences the walking distance. Moreover the music improves dyspnea in some conditions [1–2]. The aim of this study was to evaluate the effect of music with a fast tempo [3] on the distance walked during the 6MWT in COPD patients.

Method.— Eleven COPD patients ($FEV1 = 39.1 \pm 7.6\%$ of predicted values) performed randomly the same day a walking test in two different conditions: without music (WM) and with a fast music (FM). The 6MWD, the cardio-respiratory parameters and the dyspnea were measured.

Results.— No difference was observed on the walking distance depending on the conditions (WM:350 m – FM:366 m, $P = 0.101$). Cardio-respiratory parameters and dyspnea were not influenced by the music.

Discussion and conclusion.— In this preliminary study, music with a fast tempo did not modify the results of the 6MWT.

References

[1] Karageorghis CI, Priest DL. Music in the exercise domain: a review and synthesis (Part II). *Int Rev Sport Exerc Psychol* 2012;5(1):67–84.

[2] Karageorghis CI, Priest DL. Music in the exercise domain: a review and synthesis (Part I). *Int Rev Sport Exerc Psychol* 2012;5(1):44–66.

[3] Szabo A, Small A, Leigh M. The effects of slow- and fast-rhythm classical music on progressive cycling to voluntary physical exhaustion. *J Sports Med Phys Fitness* 1999;39(3):220–5.

<http://dx.doi.org/10.1016/j.rehab.2013.07.871>

Communications affichées

Version française

P120-f

Influence de la musique sur la dyspnée pendant une séance de revalidation pulmonaire



G. Caty^{*}, F. Mottart, M. Boland, E. Wasterlain, T. Pieters, G. Liistro, G. Reyckler

Cliniques universitaires Saint-Luc, avenue Hippocrate 10, 1200 Bruxelles, Belgique

*Auteur correspondant.

Adresse e-mail : gilles.caty@uclouvain.be

Mots clés : Revalidation pulmonaire ; Dyspnée ; Fatigue ; Musique

Introduction et objectif.— La revalidation pulmonaire fait partie intégrante de la prise en charge des patients atteints de broncho-pneumopathies chroniques obstructives (BPCO). Le maintien de la participation des patients BPCO à un programme de revalidation est un challenge pour l'équipe soignante. La musique a montré des effets bénéfiques sur différents paramètres impliqués dans la réduction de la participation à l'exercice [1–2]. Le but de cette étude est d'évaluer l'effet d'une musique d'ambiance sur le niveau de perception de la fatigue chez des patients BPCO pendant une séance de revalidation pulmonaire.

Matériel et méthode.— De manière aléatoire, les patients BPCO et participant à un programme de revalidation pulmonaire ont été soumis à des séances classiques, réalisées avec et sans musique d'ambiance (tempo 120 b/m). L'échelle de Borg, la dyspnée et les paramètres cardio-respiratoires sont relevés et comparés au cours des deux séances.

Résultats.— Trente-et-un paires de séances ont été comparées. Les caractéristiques des patients (moyennes \pm DS) étaient un âge de $70,5 \pm 8,4$ ans, un BMI de